Electronic Version
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Claims

[c1] 1. A non-lethal marker projectile that provides site identification capability of a target upon impact with the target, comprising:

a generally cylindrical rear base which is made of a resilient material; and

a front end extending longitudinally from said rear base, said front end including

an outer surface having a rear portion which is attached to said rear base and a nose portion serving as a windshield, said outer surface defining a space therein,

a breakable container system located in the space, said container system containing separated chemiluminescent reagents which when mixed produce light, and

a foam filler which surrounds said breakable container system and which fills the space;

wherein the container system breaks on a setback impact that is exerted during firing and initial launch, causing the chemiluminescent reagents to mix and be absorbed into said foam filler such that upon impact of the projectile with the target, said foam filler marks the target with the mixed chemiluminescent reagents.

[c2] 2. A non-lethal marker projectile as claimed in claim 1, wherein said rear base is formed of nylon, and said foam filler is formed of polyethylene or polypropylene foam.

[c3] 3. A non-lethal marker projectile as claimed in claim 2, wherein the nylon of said rear base includes at least one of a metal filler or glass fibers.

[c4] 4. A non-lethal marker projectile as claimed in claim 1, wherein said rear base includes a foam surface.

[c5] 5. A non-lethal marker projectile as claimed in claim 1, wherein said rear base is provided with stress grooves so that said rear base shatters upon impact with the target.

[c6] 6. A non-lethal marker projectile as claimed in claim 1, further including a metal insert located between a forward end of said rear base and a rearward end of said foam filler.

[c7] 7. A non-lethal marker projectile as claimed in claim 1, wherein said outer surface includes a central portion connecting said rear portion and said nose portion, and wherein said outer surface is a separate member made of plastic.

[c8] 8. A non-lethal marker projectile as claimed in claim 7, wherein said plastic nose portion is translucent such that

visible light produced by the mixed chemiluminescent reagents is visible therethrough during flight of the projectile.

[c9] 9. A non-lethal marker projectile as claimed in claim 7, wherein said plastic nose portion includes stress grooves so that said plastic nose portion shatters upon impact with the target.

[c10] 10. A non-lethal marker projectile as claimed in claim 7, wherein said plastic outer surface member includes an outermost foam surface.

[c11] 11. A non-lethal marker projectile as claimed in claim 1, wherein said foam filler forms said nose portion, and wherein a remainder of said outer surface is made of plastic and terminates adjacent said nose portion.

[c12] 12. A non-lethal marker projectile as claimed in claim 1, further including an impact cushion located between said breakable container system and said rear base.

[c13] 13. A non-lethal marker projectile as claimed in claim 1, wherein said breakable container system includes a plurality of breakable vessels and a holder for said plurality of vessels.

[c14] 14. A non-lethal marker projectile as claimed in claim

13, wherein said foam filler includes a cavity in which said holder including said vessels is securely located.

[c15] 15. A non-lethal marker projectile as claimed in claim 1, wherein said foam filler forms said outer surface.

[c16] 16. A non-lethal marker projectile that provides site identification capability of a target upon impact with the target, comprising:

a generally cylindrical rear base which is made of a resilient material and which includes stress grooves so that said rear base shatters upon impact with the target; and

a front end extending longitudinally from said rear base, said front end including

an outer surface having a rear portion which is attached to said rear base and a nose portion serving as a windshield, said outer surface defining a space therein,

a plurality of breakable vials located in the space, said vials containing chemiluminescent reagents which when mixed produce light,

a holder for said plurality of vials, and

a foam filler including a central cavity in which said holder including said glass vials is securely located and which thus surrounds said breakable vials and which fills the space;

wherein the container system breaks on a setback impact that is exerted during firing and initial launch, causing

the chemiluminescent reagents to mix and be absorbed into said foam filler such that upon impact of the projectile with the target, said foam filler marks the target with the mixed chemiluminescent reagents.

[c17] 17. A non-lethal marker projectile as claimed in claim 16, wherein said nose portion is made of plastic and is provided with stress grooves so that said nose portion shatters upon impact with the target

18. A non-lethal marker projectile as claimed in claim 17, wherein said rear base includes a foam surface and said nose portion includes a foam surface.

[c18] 19. A non-lethal marker projectile as claimed in claim 16, further including an impact cushion located between said breakable container system and said rear base..

[c19] 20. A non-lethal marker projectile as claimed in claim 16, wherein said foam filler forms said nose portion.